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# INSTRUCTIONS FOR ARMOURERS

1931

*Deleted from W.O.  
Catalogue Amolt. 30  
June 52*

SUPPLEMENT No. 2

**GUNS, MACHINE, BREN, .303-IN.,  
MARK I  
MOUNTINGS, TRIPOD, BREN .303-IN.  
M.G., MARK I  
AND ACCESSORIES**

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MARK I  
MOUNTINGS, TRIPOD, BREN .303-IN.  
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Printed under the Authority of HIS MAJESTY'S STATIONERY OFFICE  
by William Clowes & Sons, Ltd., London and Beccles.

By Command of the Army Council,

*H. J. Cressy*

THE WAR OFFICE,  
10th August, 1938.

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#### APPENDIX

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# INSTRUCTIONS FOR ARMOURERS 1931

## SUPPLEMENT No. 2

### GUNS, MACHINE, BREN, 303-IN., MARK I. MOUNTINGS, TRIPOD, BREN 303-IN. M.G., MARK I, AND ACCESSORIES

Drawing Nos. D.D.(E) 1923 (2 sheets), 1924 and 1925  
(enclosed in docket for plates issued with "Instructions for  
Armourers 1931")

Weight of gun, approximately 22½ lb.

" " mounting, approximately 28 lb.

## CHAPTER I

### THE GUN

#### Section 1.—Stripping and Assembling

1. See that the gun is unloaded.
2. *To remove the piston and breech block groups.*—
  - (a) See that the mechanism is in the *fired* position. With the left hand raise the carrying handle to the vertical position and pull rearward, at the same time preventing the gun from moving to the rear. This action compresses the buffer spring and releases the pressure on the body locking pin. With the thumb of the right hand push the body locking pin from left to right and with the finger and thumb pull out to its fullest extent. The carrying handle can now be released.
  - (b) Ensure that the barrel nut catch is engaged with the body and draw the butt slide gently to the rear until the stop meets the barrel nut. Pull the return spring rod to the left, rotate the cocking handle through 90° in a horizontal plane and pull sharply to the rear to withdraw the breech mechanism. Return the cocking handle to the forward position. Remove the piston and breech block, raising the rear end as necessary and release the pressure on the return spring rod. Remove the breech block from the piston extension by pulling the block to the rear and giving a slight upward tilt to clear the piston post.



*To assemble the piston and breech block groups.*—Replace the breech block on the piston extension by first engaging the grooves on the underside of the breech block with the guides on the piston extension, and push the breech block forward as far as it will go. The piston and breech block are now ready for assembly to the gun. Pull the return spring rod to the left and insert the piston and breech block groups into the body. Release the pressure on the return spring rod and push the butt slide forward. Push home the body locking pin.

3. *To remove the barrel group.*—Turn the gun to the right and allow it to rest on the stop on the bipod sleeve. Turn the carrying handle to the vertical position. Press the barrel nut catch, situated on the inner side of the arm of the barrel nut, and rotate the nut upward to its fullest extent, thereby releasing the barrel from engagement with the locking threads. By means of the carrying handle, push the barrel forward clear of the body.

*To assemble the barrel group.*—Rotate the barrel nut upward to its fullest extent. Insert the barrel into the front of the body, noting that the lug on the cylinder correctly engages the gas regulator. Rotate the barrel nut downward until the catch engages with the underside of the body.

4. *To remove the butt group.*—Proceed as instructed at 2 (a). Disengage the barrel nut catch and withdraw the butt slide clear of the body.

*To assemble the butt group.*—See that the barrel nut catch is disengaged and that the body locking pin is to the right. Insert the butt slide into the rear of the body, ensuring that the guides have entered the grooves. Push the butt slide forward until the front end is in advance of the barrel nut. Engage the barrel nut catch. Continue the forward movement of the butt slide and push home the body locking pin.

5. *To remove the bipod group.*—Proceed as instructed at 3. Rotate the body to the left through 90° and withdraw it from the bipod sleeve.

*To assemble the bipod group.*—Insert the body into the bipod sleeve, ensuring that the interruptions in the sleeve and body coincide; rotate the body 90° to the right.

6. *To remove the butt handle group.*—By means of the thumb-piece, rotate the rear mounting pin downward, pull out to the right until it meets the stop and remove the handle. Re-engage the mounting pin and rotate to the top position, noting that the detent has engaged in the recess provided.

*To assemble the butt handle group.*—Disengage and remove the rear mounting pin as instructed above. With the grip pointing forward assemble the butt handle and re-engage the mounting pin.

### Detailed stripping and assembling

#### 1. Piston Group. Drawing D.D.(E) 1923, Sheet 2 (Group E)

*To remove the piston post.*—Hold the piston vertically with the left hand, the piston post to the front, and place the rear end of the piston post on a magazine box or similar object. Force the piston downward, thereby compressing the piston post spring and removing the pressure from the cotter. With a punch push the cotter to the left and remove. Release the pressure on the piston. By means of a blow with a mallet, or by striking against a wooden surface, force the piston post from its seating and remove from the extension. Remove the plunger and spring.

*To assemble the piston post.*—Insert the spring and plunger into the piston post with the plunger end protruding. Insert the assembled post, plunger end first, into the opening on the underside of the piston extension. Compress the piston post spring and press the piston post head through the opening until the post is flush with the underside of the piston extension. Hold the piston vertically and place the rear end of the piston post on a magazine box or similar object. Force the piston downward to further compress the spring and insert the cotter until it is flush with the piston guides, ensuring that the small projection on the cotter is on the right side of the piston extension.

*To remove the piston stem from the piston extension.*—Drive out the retainer from the right and unscrew the stem.

*To assemble the piston stem to the piston extension.*—Screw the stem into the extension until it is right home on the shoulder at the bottom of the screwed hole. Note that the slot in the stem is in alignment with the hole in the extension and insert the retainer from the left. With a centre-punch spread the end of the retainer to prevent loss.

#### 2. Breech block group. Drawing D.D.(E) 1923, Sheet 2 (Group C).—

*To remove the firing pin.*—Invert the breech block and press the retainer pin from left to right, allowing the spring to force the firing pin rearward, taking care to prevent loss.

*To assemble the firing pin.*—Assemble the spring to the firing pin and with the retainer to the extreme right insert the firing pin into the breech block, ensuring that the groove for the retainer is at the top. Compress the spring by pushing the firing pin forward and push the retainer home (from right to left).

*To remove the extractor.*—Hold the breech block, with the underside uppermost, and with the finger lift the front end of the stay until it is disengaged from the extractor, taking care to prevent loss when the pressure of the stay spring is released. Remove the extractor upward.

*To assemble the extractor.*—Insert the extractor into its guides, claw downward. Assemble the extractor stay spring to the stay and insert into the breech block, rear end first, with the projection uppermost. Press down the front end of the stay until it is retained in position.

### 3. Barrel group. Drawing D.D.(E) 1923, Sheet 2 (Group D).

*To remove the gas regulator.*—With the nose of a bullet press the gas regulator retainer inward until it is flush with the projection on the regulator. Insert the bar of the combination tool into the slots of the regulator and rotate until the projection on the regulator coincides with the slot in the gas block. With the copper hammer tap the regulator out from the right.

*To assemble the gas regulator.*—With the regulator retainer flush with the projection on the regulator, insert from the left, projecting end first, into the recess provided in the barrel sleeve. When it is fully home, rotate the regulator by means of the combination tool until the tool abuts the stop on the sleeve. With the nose of a bullet push the retainer through as far as it will go.

*To remove the gas regulator retainer.*—With the nose of a bullet press the gas regulator retainer inward until it is flush with the projection on the regulator. Drive out the small securing pin and withdraw the retainer from the regulator.

*To assemble the gas regulator retainer.*—Insert the retainer into the regulator, ensuring that the groove for the securing pin is in the correct position to take the pin. Drive home the securing pin.

*To remove the foresight.*—Remove the foresight bracket screw from the left and withdraw the protector to the rear. Support the left side of the bracket and with a brass drift drive out the blade, taking care to prevent damage to the blade.

*To assemble the foresight.*—With the sighting edge to the rear, assemble the foresight blade into the dovetail slot from the right. Support the bracket on the left side and with a brass drift drive the blade into position. Replace the foresight protector from the rear and assemble the screw.

*To remove and strip the carrying handle.*—Rotate the carrying handle to the vertical position. Remove the screw on the left side and remove the assembled grip. Drive out the small pin, now visible, and remove the plug and spring, taking care to prevent loss. Turn the arm of the carrying handle sleeve downward, thereby allowing the plunger to drop out of the groove in the barrel. Remove the sleeve from the rear. When necessary, the plunger can be removed by driving out the plunger retaining pin, which is lightly riveted.

*To remove the carrying handle grip.*—Insert the large forked screwdriver of the combination tool into the hole at the rear of the grip and unscrew the stem nut. Some difficulty may occur, as the end is lightly riveted to prevent the loss of the nut and, consequently, should only be stripped in cases of necessity. Withdraw the spring and remove the stem from the front end. Again using the large forked screwdriver, unscrew the catch nut and with a brass drift drive the catch from the grip, taking care that no damage occurs to the thread.

*To assemble the carrying handle grip.*—Insert the carrying handle catch in the front of the grip and gently tap home, taking care that the two slots are in line with the two lugs on the grip. Assemble the catch nut and tighten with the forked screwdriver. Replace the carrying handle stem, with the slot in the head of the stem engaging the lug on the carrying handle catch, and insert the spring in the rear of the grip. Place the stem nut on the forked screwdriver and insert in the grip, compressing the spring and turning the nut at the same time. When the nut is fully home, lightly rivet the end of the stem to prevent loss of the nut.

*To assemble the carrying handle.*—The carrying handle can be assembled complete before being replaced on the barrel. If the plunger has been removed, replace by inserting in the sleeve, ensuring that the recess in the plunger is in the correct position to receive the plunger retaining pin, and that the small diameter is at the bottom for engagement in the barrel groove. Drive home the retaining pin and lightly rivet. Insert the plunger spring and by means of the plug compress the spring until the hole in the plug is in alignment with the

hole in the arm of the carrying handle sleeve, taking care that the angular face on the plug is at the top and toward the front of the carrying handle. Assemble the retaining pin. Replace the assembled grip on the arm of the carrying handle sleeve with the grip pointing to the rear. Assemble the screw from the left side and by means of a centre-punch force metal from the sleeve into the slot to prevent the screw turning. Assemble the sleeve to the barrel from the rear and, with the grip downward, push forward along the barrel, compressing the plunger as necessary by means of the lead provided, until the plunger is positioned in the rear groove. Rotate the carrying handle to the vertical position.

#### 4. Butt group. Drawing D.D.(E) 1923, Sheet 2 (Group A).

*To remove the butt strap.*—Unscrew the butt strap screw from the left side and remove the assembled strap. With the small forked screwdriver of the combination tool remove the stem nut and spring.

*To assemble the butt strap.*—Insert the stem into the butt strap with the catch projection in the slot at the top of the stem. Complete assembly in the reverse order to stripping.

*To remove the butt plate and return spring.*—Rotate the butt strap to the rear position, depress the butt plate catch with the nose of a bullet and remove the butt plate. Place the end of the combination tool over the return spring tube cap, press the cap inward and turn anti-clockwise, approximately 90°. Ease the combination tool to the rear and remove the cap. Withdraw the return spring and rod.

*To assemble the butt plate and return spring.*—Insert the return spring and rod, with the latter foremost, into the return spring tube. Insert the cap in the combination tool and place over the end of the return spring. Compress the spring, taking care to prevent buckling, until the cap is in a position to engage the lugs on the return spring tube. Rotate the combination tool 90° in a clockwise direction and remove to the rear. Engage the lug, situated at the bottom of the butt plate, into the recess in the butt bracket and rotate the butt plate until it is engaged by the butt plate catch. Pull the strap to the rear to disengage the catch and rotate forward.

*To remove the return spring from the return spring rod.*—Hold the spring as near the rod as possible and gently pull the rod from the spring, taking care not to damage the end coil.

*To assemble the return spring and rod.*—Reverse the order for stripping.

*To remove and strip the butt plate catch and butt.*—Using the end of the combination tool, unscrew the return spring tube nut situated in the recess at the rear of the butt. As the nut is being unscrewed, a clicking action will be observed, due to the serrations on the nut making contact with the detent of the butt plate catch. Remove the nut from the tube and withdraw the butt plate catch. Remove the butt from the butt slide by withdrawing to the rear. Hold the ring portion of the butt plate catch in the left hand and with the other slightly compress the spring by pressure on the bracket and slide the bracket from the catch. This action releases the compression on the spring and care must be taken that the spring is not lost. The return spring tube detent nut can now be removed.

*To assemble the butt plate catch and butt.*—With the ring portion of the butt plate catch bracket downward, insert the detent in the slot with the operating edge downward. Assemble the spring above the detent. Compress the spring and assemble the catch to the bracket, ensuring that the knuckle joint is flush. Assemble the butt to the return spring tube and slide forward until it meets the butt slide, noting that the two projections at the front of the butt enter the two holes provided at the rear of the butt slide. With the butt plate catch to the rear, assemble the ring portion of the bracket over the return spring tube and the catch lying in the slot at the top of the butt. With the combination tool replace the return spring tube nut, taking care that the nut is correctly assembled, or damage may occur to the fine screw thread at the rear of the spring tube.

*To remove the butt bracket.*—With the screwdriver provided in the combination tool remove the two screws from the underside of the butt and withdraw the bracket.

*To assemble the butt bracket.*—Ensure that the rear mounting pin is assembled and reverse the order of stripping.

*To remove the rear mounting pin.*—Unscrew the mounting pin screw approximately six turns in order to remove the end of the screw from the groove in the pin. Rotate the arm downward to disengage the detent and remove from the right.

*To assemble the rear mounting pin.*—Reverse the order of stripping.

*To remove the butt swivel and buffer spring.*—Remove the front butt swivel screw and unscrew the rear screw until the plate on the left side can be removed. Place the buffer on a bench and compress the buffer spring to allow the withdrawal

of the rear butt swivel screw. Release the pressure on the spring and remove the buffer and spring. Remove the swivel complete. Drive out the taper pin and remove the swivel from the plate.

*To assemble the butt swivel and buffer spring.*—Insert the swivel into the right plate and secure by replacing the taper pin. Insert the right and left plates in their respective recesses in the butt and replace the front swivel screw. Replace the buffer spring on the stem of the buffer and insert them into the rear of the butt, ensuring that the slot in the stem is in the correct position for the rear swivel screw to pass through. Stand the butt slide on the buffer cap and press downward, thereby compressing the buffer spring to allow the rear swivel screw to be replaced.

*To remove the cocking handle slide cover.*—With a brass drift gently drive the cover from the rear, taking care that the butt is not damaged and that the cover does not tilt; otherwise damage to the grooves in the butt will occur.

*To assemble the cocking handle slide cover.*—Reverse the order of stripping.

*To remove and strip the trigger mechanism.*—Rotate the change lever until the detent is clear of its recess, i.e. between "safe" and "automatic" or "safe" and "repetition," and remove the lever from right to left. With the nose of a bullet push out the sear pin from right to left, controlling the upward tendency of the sear with the left hand, and remove the sear, spring and post. Rotate the tripping lever upward to disengage the plunger from the cannellure in the trigger pin and remove the pin from right to left. Remove (upward) the trigger and tripping lever complete. Disengage the trigger from the tripping lever. Drive out the trigger spring plunger pin and remove the plunger and spring. Drive out the detent pin and remove the spring and detent from the change lever.

*To assemble the trigger mechanism.*—Assemble the change lever, detent pin and spring, taking care to position the recess in the detent to allow for the passage of the retaining pin.

Insert the trigger spring plunger and spring and replace the retaining pin. With the plunger foremost and the projection uppermost, insert the tripping lever from the rear into the slot at the top of the trigger and assemble the axis pin. With the tripping lever rotated forward, insert the tail of the trigger through the opening in the butt slide and, when it is positioned, assemble the trigger pin from left to right.

Assemble the sear spring on the post and insert at the rear

of the trigger mechanism recess. With the piston bent of the sear toward the rear, place the bents of the tripping lever through the square opening. See that the trigger spring plunger engages the trigger pin correctly and position the sear spring in the recess on the underside of the sear. Lower into position and assemble the sear pin from left to right.

Slightly depress the tripping lever and insert the change lever from the left. Rotate the change lever fully forward to engage its detent in one of the recesses.

*To remove the pistol grip.*—Using the projections on each side of the screwdriver slot of the combination tool, unscrew the pistol grip screw from the underside of the grip. Remove the screw and the grip.

*To assemble the pistol grip.*—Reverse the order of stripping.

*To remove the return spring tube, piston buffer nut and spring.*—Grip the flats of the return spring tube lightly in a vice and with a suitable spanner engage the enlargement at the rear of the butt slide. Unscrew in an anti-clockwise direction, taking care that the butt slide is not damaged and that the compressed buffer spring does not force the butt slide upward out of control when the tube becomes disengaged.

Remove the buffer spring and the loose friction collar. Should the remote necessity arise to remove the piston buffer, obtain a screwdriver or flat piece of steel which is a good fit in the slots of the buffer nut, both for width and thickness. Grip the screwdriver or piece of steel in a vice and unscrew by the same method as for the return spring tube. Remove the buffer from the front.

*To assemble the return spring tube, piston buffer nut and spring.*—Insert the buffer in the butt slide and assemble the nut, using the screwdriver, or piece of steel, as recommended for stripping, to screw the nut into position; assemble the friction collar, coned edge forward, and the buffer spring. Grip the flats of the return spring tube lightly in a vice and assemble the butt slide, taking care that the threads start correctly, as some difficulty may be experienced owing to the necessity to compress the buffer spring. With a suitable spanner, operating on the enlargement at the rear of the butt slide, screw home the butt slide until the breeching-up lines coincide.

*To remove the front mounting pin.*—See instructions for rear mounting pin.

*To assemble the front mounting pin.*—Insert the mounting pin from the right and screw the retaining screw home, taking



care to ensure that the head of the screw is level or slightly below the surface of the butt slide. Rotate the arm upward until it is engaged by its detent.

*To remove the ejection opening cover.*—Remove the front mounting pin screw and place the cover in its foremost position so that the ejection opening cover catch pin is in line with the hole drilled through the butt slide. Drive out the pin and remove the catch and spring from the underside. Withdraw the cover from the front.

*To assemble the ejection opening cover.*—Insert the cover into the butt slide from the front, with the slot in the cover to the rear, replace the spring in the catch, then insert the catch into the slide from the underside with the knurled side downward. Holding the catch, place the slide in its foremost position, noting that the hole in the catch and cover are in line with the hole drilled through the side of the butt slide. Replace the pin. Replace the mounting pin screw.

#### 5. Bipod group. Drawing D.D.(E) 1923, Sheet 2 (Group F).

*To remove the bipod sleeve.*—With the forked screwdriver of the combination tool remove the bipod sleeve screw nut. Unscrew the sleeve screw and withdraw from the left. Rotate the sleeve horizontally through 90°, thereby bringing the slot in the sleeve in line with the parallel faces of the bipod bracket. Remove the sleeve from the top.

*To assemble the bipod sleeve.*—With the stop projection on the sleeve bracket facing forward, assemble the sleeve over the bracket with the screwed hole to the front. Rotate the sleeve in a clockwise direction through 90° and assemble the sleeve screw. With the forked screwdriver assemble the sleeve screw nut.

*To remove the bipod bracket and legs.*—See that the bipod leg stop is out of operation and grip in the vice across the upper portion of the legs. Remove the bracket screw and bracket. Gently release the vice pressure and remove the legs and spring. Remove the leg stop from the left leg.

*To assemble the bipod bracket and legs.*—Replace the leg stop in the left leg, ensuring that it is out of operation, and assemble the bipod spring, one end in each leg. Grip in a vice across the upper portion of the legs and compress the spring until the holes for the bracket screw coincide. Assemble the bipod bracket with the screwed hole to the rear. Replace the bracket screw.

*To remove the lower leg(s).*—Support the leg catch bracket and drive out the catch pin, noting that the pin is lightly riveted. Remove the catch and spring and withdraw the lower leg.

*To assemble the lower leg(s).*—Assemble the lower leg, with the serrations on the tube to the rear, in a position to be engaged by the catch. Replace the catch, spring and pin, lightly riveting the pin when in position.

#### 6. Body group—Drawing D.D.(E) 1923, Sheet 2 (Group B).

*To remove the ejector, magazine catch and magazine catch pin.*—Slide the magazine opening cover forward and with the nose of a bullet press the magazine catch pin to the right to disengage the retainer, withdraw the pin to the right as far as it will go. Slide the ejector and magazine catch forward clear of the body. Grip the ejector and magazine catch between the finger and thumb of the left hand, the thumb being against the rear of the ejector, and the operating projection of the catch between the finger and thumb of the right hand. Compress the magazine catch spring and rotate the catch forward, thereby disengaging the two components. Remove the spring.

Return the magazine catch pin until the head is just clear of the body, and with a pair of pliers rotate the pin clear of its retainer, taking care that the head is not damaged. Remove the pin, retainer and spring.

*Note.*—To remove the ejector when the gun is assembled the mechanism must be in the "cocked" position to allow clearance for the ejector to be pushed forward.

*To remove the magazine opening cover.*—Withdraw the cover to the rear.

*Note.*—The magazine catch must be removed before the cover can be withdrawn.

*To assemble the magazine opening cover.*—Insert the cover with the serrated projection toward the rear.

*To assemble the ejector, magazine catch, and magazine catch pin.*—Replace the retainer and spring and by compressing the retainer assemble the catch pin, ensuring that the retainer is positioned in the groove of the pin. Withdraw the pin as far as it will go. Re-assemble the ejector and magazine catch in the reverse order to stripping and replace in the body with the ejector facing forward. Press the catch pin to the left.

*Note.*—Rearward pressure applied at the front of the magazine catch will assist the movement of the pin.

*To remove and strip the backsight.*—Remove the split pin and with the small forked screwdriver of the combination tool remove the nut. Remove the drum from the flats on the cam; a slight tap on the end of the screw will facilitate removal, care being taken that the detent and spring are not lost. Remove the detent and spring. Remove the backsight screw, now visible, and with a brass drift tap the sight upward clear of the dovetail, taking care to avoid damage to the thin rim. With a side movement remove the leaf. Remove the plunger, spring and cam.

*To assemble the backsight.*—Assemble the cam, the backsight leaf in its lowest position, and insert the plunger and spring with the radial head of the plunger bearing on the underside of the leaf. Insert the sight into the rear dovetail slot in the body and tap downward until the screw hole is in position to assemble the screw. Replace the screw, detent and spring. Replace the drum, ensuring that the '2' is visible through the window at the rear when the leaf is in its lowest position. Replace the nut and split pin.

*To remove the body locking pin.*—Partly withdraw the pin to the right, grip the head with a pair of pliers and rotate the pin, thereby removing the retainer from the groove in the pin. Withdraw the pin from the right and remove the retainer and spring.

*To assemble the body locking pin.*—Replace the retainer and spring, insert the body locking pin by depressing the retainer. Rotate the pin until the retainer is positioned in the groove provided.

*To remove the barrel nut.*—Disengage the barrel nut catch, close the magazine opening cover and with the nose of a bullet press down the plunger in front of the magazine opening cover. Lift out the barrel nut. Drive out the catch pin and remove the catch and spring.

*To assemble the barrel nut.*—Replace the catch and spring and secure by means of the catch pin. Insert the barrel nut in its housing, ensuring that the lever is downward and that the retainer passes through the recess in the barrel nut. Engage the barrel nut catch.

*To remove the barrel nut retainer and plunger.*—Remove the magazine opening cover and with the nose of a bullet force the barrel nut retainer in as far as possible. Rotate the body and allow the retainer plunger to drop out. Remove the retainer and spring from the front.

*To assemble the barrel nut retainer and plunger.*—Replace the spring and retainer, with the flats in position to receive the slot in the plunger, ensuring that the operating portion at the front is at the top. Force the retainer in as far as possible and assemble the plunger with the angular recess to the rear. Release the pressure on the retainer.

*To remove and strip the cocking handle slide.*—Pull the slide rearward until the cocking handle pin is in line with the semi-circular recess in the guide in the body. Grip the handle and remove the pin. Remove the handle, plunger and spring and withdraw the slide to the rear, finally removing it from the body with a rotary movement to allow the enlarged front end to pass through the hole at the rear of the slot.

*To assemble the cocking handle slide.*—Turn the body on its left side, rear end foremost. Assemble the plunger and spring to the cocking handle and lay it along the cocking handle slide guide, the front end of the handle abutting the stop at the front of the guide. Insert the slide in the body and push forward as far as it will go. Maintain the position of the handle and apply forward pressure to the slide through the medium of a bench or like object, until the holes in the handle and slide coincide, taking care that the slide is not damaged. Replace the pin from the right side. Withdraw the slide until the pin is in alignment with the recess in the slide guide and press home the pin until the head enters the recess in the cocking handle.

## Section 2.—Cleaning, etc.

The general instructions for cleaning and oiling are contained in Part III, Chapter 1, Section 3.

Special attention should be given to the barrel, gas regulator, gas cylinder, bipod sleeve, breech block, piston and body. All parts to be dry cleaned and lightly oiled.

*Note.*—ON NO ACCOUNT MUST AN ABRASIVE OF ANY DESCRIPTION BE USED FOR CLEANING PURPOSES.

*Barrel.*—To remove the fouling from the inside of the flash eliminator (barrel sleeve), use the cutting edge provided on the outside diameter of the combination tool by inserting the tool into the flash eliminator and rotating clockwise.

Remove the fouling from the gas block with an oily rag and ensure that the regulator rotates freely.

After boiling water has been poured through the barrel, see

that no moisture remains in the gas hole or at the bottom of the flash eliminator.

*Gas regulator.*—The regulator does not normally collect excessive fouling; any fouling on the outside diameter can be removed by the use of a wire brush.

Remove the fouling from the gas holes with the set of reamers provided.

*Note.*—For purposes of identification the smallest gas hole is known as No. 1 and the largest as No. 4.

*Breech block.*—Clean the face of the breech block and the point of the firing pin with a wire brush or oily rag.

*Piston.*—To clean the front face, gently tap the fouling with the copper hammer provided on the combination tool; if this does not completely remove all the fouling, the remainder can be removed by using a screwdriver, care being taken that the front edge is not damaged. The fouling collected on the diameter, and in the annular grooves, should be removed by means of a wire brush or scratch card, the grooves being finally cleaned by inserting the smaller of the forked screwdrivers and rotating the piston.

*Body and gas cylinder.*—With the nose of a bullet remove any fouling that has collected in the holes at the front of the cylinder. See that all the holes are clean.

*Note.*—It is essential that the outside tapered diameter is maintained, or loss of power may result.

The cylinder portion of the body and the gas cylinder are integral and should be cleaned, by means of the cylinder rod, wire brush and mop, as follows:—

First use the wire brush, well oiled, in a similar manner to the Lewis brush. Particular attention should be given to the extreme front end of the cylinder, as it is at this point that the fouling collects. After using the wire brush follow on with the mop covered with flannelette and, finally, the barrel cleaning rod with oiled flannelette.

See that all guides and frictional surfaces are free from grit or fouling.

*Bipod bracket and bipod sleeve.*—The ball portion of the bracket should be kept free from grit and dirt; neglect in keeping these components clean will result in the bracket and sleeve becoming very tight, and difficulty will be experienced in the movement of the bipod. Clean the bore of the sleeve in the same manner as the gas cylinder, using the rod, wire brush and mop.

### Section 3.—Examination of the gun

#### 1. General.

These instructions are for general guidance. Circumstances may arise which necessitate a change in the sequence of examination. *See that the gun is unloaded.* Record the gun number (on the rear of the body). Examine the gun for external damage and for fracture, giving special attention to the rear sight, butt and butt handle, carrying handle, fit of the barrel in the body and the bipod on the cylinder. The spare parts supplied with each gun should be examined and applied, where necessary, during detailed examination to ensure that they assemble correctly and are fit for use.

#### 2. Body group.

*Backsight.*—Examine the complete sight for rigidity in the dovetail slots of the body, and to ensure that the leaf, under spring pressure, is resting on its stop when the dial reads 200. Rotate the drum to ensure that the leaf will travel the maximum amount of elevation without undue friction and see that the detent functions satisfactorily. The leaf should be examined for distortion or fracture. If fractured, or damaged beyond local repair, it should be replaced.

Examine the backsight cam nut and ensure that the thread is not stripped.

*Cylinder.*—Examine the prolongation on the front for distortion and burrs; either of these faults may cause difficulty in assembling the barrel in the gun. Examine the interrupted flanges which retain the bipod and test ease of assembly.

*Barrel nut.*—Ensure that the number corresponds with that of the gun. Examine the catch pin for security and the catch for correct functioning. Test the inserted stop for security and examine the internal threads for damage and burrs; assemble the nut into the body and ensure that the detent positions correctly in the 'V' notches.

*Cocking handle.*—Examine the slide for straightness and freedom in the groove in the body and ensure that the cocking handle folds down to its closed position.

*Magazine catch.*—Test the magazine catch for functioning by inserting several magazines into the gun. Test the magazine catch pin for security and the retainer for correct functioning.

*Magazine opening cover.*—Test to ensure that it slides freely in the grooves and that the detent retains it in both open and closed positions.

*Body.*—Examine the barrel positioning key, as any damage or burrs may cause difficult assembly of the barrel. Examine the underside of the body where the barrel nut catch engages, for distortion and burrs. If any sign of damage is evident, the catch should be tested for correct engagement and release. Examine the piston and butt slide grooves, particularly at the rear, and see that the piston and butt slide assemble freely. Examine the bullet guides and internal top face of the body for damage; all operating faces should be smooth and free from obstruction.

Examine the front magazine retaining lug for burrs or damage and to ensure that the magazine assembles freely.

Examine the locking shoulder for security, noting that the screw is fully home and secured by means of centre punching. Examine the locking face and insert the breech block and piston to ensure that the breech block rises freely and positions correctly in front of the locking face.

### 3. Barrel group.

*Gas regulator.*—Test for functioning by rotating in turn to all four positions. See that the gas holes are free from fouling and that the retainer functions correctly.

*Barrel.*—Record the barrel number, which should correspond with the number on the body. Examine the positioning groove on the underside and the locking threads for damage or burrs, ensuring that there is no interference when assembling to the body. Examine internally for condition and wear. When badly worn in lead and bore, report for accuracy test in accordance with Equipment Regulations, Part 1. See that the chamber is clean and undamaged and that dummy cartidges enter freely.

*Note.*—The minimum diameter of the bore is .301-in.

*Carrying handle.*—Examine the grip for splits and the handle for correct functioning in all positions. Examine generally for damage or wear.

*Barrel sleeve.*—Test the sleeve and retaining pin for security, if the sleeve is loose, the barrel should be reported for exchange. Examine the flash eliminator and see that it is free from fouling. Examine the internal diameter and nose of the gas block for damage or burrs; the effect of the latter may cause difficulty in assembling the barrel. Test the protector foresight for distortion and security, and the blade for damage; ensure that the blade is not slack in the dovetail slot.

### 4. Butt group.

*Mounting pins.*—Examine for fit in the holes and to ensure that the retaining screws allow for free functioning of the pins and prevent their complete withdrawal. Test the arm of the pins for correct detent engagement.

*Ejection opening cover.*—Examine for damage or distortion and see that it slides freely in the grooves; test the catch for engagement when the cover is in either the open or closed positions.

*Butt slide.*—Note that the number on the butt slide corresponds with the gun number. Examine the guides for damage and test for free assembly in the body grooves. Examine the front stop for distortion and burrs and see that the slide moves freely in the grooves in the body.

*Trigger mechanism.*—Test for correct functioning in each of the three positions of the change lever. Remove the mechanism and examine the components for damage or wear, giving special attention to the bents and springs.

*Butt plate.*—Examine generally to see that it is retained correctly by the catch and is free on the butt.

*Note.*—Swelling of the woodwork may prevent the free movement of the plate.

*Return spring, rod, cap and tube.*—Examine the interruptions on the cap and the end of the tube for damage, and free assembly. Note that the bore of the tube is smooth and that the spring operates freely. Examine the spring rod and spring for distortion and assembly.

*Piston buffer.*—Examine for damage or wear, and test the spring for correct functioning.

*Butt plate buffer.*—Examine the cap of the buffer for security of the stem and test for functioning.

*Butt handle.*—Examine for splits and damage to the faces of the stem and see that the grip is secure on the stem.

*Butt handle bracket.*—Test for security to the butt, taking particular note that the threads in the butt are not stripped.

*Pistol grip.*—Examine for splits or damage, also for security to the butt slide.

*Butt.*—Examine for splits or damage; test for rigidity on the tube and ensure that the tube nut is secured by means of the detent. Test the right and left swivel plates for security and the swivel for free rotation.



### 5. Bipod group.

*Sleeve.*—Examine the rear face and interruptions for damage or wear and the fit of the sleeve on the cylinder.

*Note.*—Excessive slackness of the sleeve on the cylinder may cause loss of power and malfunctioning.

*Bracket.*—Test for freedom of movement and examine for damage.

*Legs.*—Examine the stops for wear or damage and test for functioning in the open and closed positions. Examine for straightness and distortion. Test the functioning of the lower legs, noting that the catches correctly engage the serrations. Test the shoes and catch brackets for security to the tubes.

*Bipod leg catch.*—Test for functioning and correct engagement.

### 6. Breech block group.

*Breech block.*—Examine for damage, fracture and wear, giving particular attention to the locking face, front feed projections and piston stop. See that the cartridge face is not excessively eroded or the firing pin hole excessively worn.

*Firing pin.*—Test for straightness and free movement in the block and examine the point for damage.

*Extractor.*—Examine for damage, fracture and wear, giving special attention to the claw.

*Stay extractor.*—Examine for damage or wear. Assemble with an extractor to the breech block and check the spring for retention of a cartridge on the breech face.

### 7. Piston group.

*Piston stem and piston extension.*—Examine generally for wear, damage and fracture, giving particular attention to the cams and guides. Test for security of the stem in the extension and ensure that the front face and cannellures are free from fouling.

*Piston post, spring and cotter.*—Examine the projecting lug on the cotter for damage, and the piston post for wear, damage or fracture, giving special attention to the sear bent and firing pin face. Test for functioning and strength of the spring.

Assemble the breech block and piston groups and note that the breech block functions smoothly. Insert the mechanism in the body and test for free movement in both rear and forward positions.

### Assembled gun.

*Protrusion of firing pin.*—To check the firing pin protrusion. With the extractor and stay removed, assemble the breech block to the piston extension and, with the piston vertical, place the rear end on a bench. Move the breech block to the locked position, i.e. in contact with the front of the piston post. Check the protrusion with the gauge provided.

*Cartridge head space (testing).*—Remove the butt slide and breech mechanism, also the firing pin and extractor from the breech block. Insert the head space gauge into the chamber and the breech mechanism into the body and gently move the piston, with the thumb and finger, forward as far as it will go. Test both barrels.

The head space is satisfactory when, without undue force, the locking action is completed when using the .064-in. gauge and is incomplete when using the .074-in. gauge.

It is insufficient when the locking action is incomplete when using the .064-in. gauge, and is excessive when locking is completed when using the .074-in. gauge; the former condition is probably due to burrs or foreign matter and the latter to excessive wear. If it is excessive, check with a comparatively new barrel, and if it still exceeds .074-in., the gun should be reported for exchange (factory repair). If it is below .074-in., the defective barrels should be reported for exchange.

*Springs* which appear to be weak may be checked for length by referring to plate D.D.(E) 1923, Sheet 2.

After the gun has been re-assembled, the following tests should be carried out.

1. Verify that the gun and spare barrels assemble correctly.
2. Verify that the shoes engage correctly on the body when the bipod is folded.
3. Insert a magazine of dummy cartridges and test the gun for functioning, both single shot and automatic action, giving special attention to feed, extraction and ejection. After the last cartridge has been ejected and the magazine removed, the breech mechanism should be retained in the cocked position. Note that the ejector is central in the breech block groove.
4. Cock the gun and by means of a spring balance operating on the cocking handle record the weight to withdraw the

mechanism slightly to the rear of the sear. If it is below 16 lb., the return spring should be exchanged.

5. Mount the gun on a tripod in both horizontal and A.A. positions to check freedom of assembly.

6. Finally ascertain that all fixing pins and retainers are secure and that the gun is complete and in working order.

#### Section 4.—Repairs and Adjustments

*Note.*—For parts which, when unserviceable, necessitate the sending of the gun to store for exchange or factory repair, see Equipment Regulations, Part 1.

The annual allowance of parts for repair of guns is as laid down in Equipment Regulations, Part 1.

The spare parts belonging to the gun must not be drawn upon to replace gun parts until the annual allowance of parts has been used up. When it is necessary to draw upon the spares, indents must at once be put forward for replacement.

Parts, other than those referred to, which may be required for replacement purposes will be indented for as necessary.

*Testing and adjusting of cartridge head space.*—The method of testing the head space and the procedure to be adopted is described in the "Examination of the Gun". Apart from assembly of new barrels there is no method by which an armourer can adjust the head space, and on no account must locking shoulders be exchanged from one gun to another.

*Weight of return spring.*—There is no means of adjusting the weight and, should the spring be light in weight or sufficiently distorted to cause malfunctioning, a new one should be fitted.

*To adjust the foresight blade.*

*Lateral adjustment.*—Mark the existing location of the foresight before altering its position, and see that the bracket is supported when tapping the blade over. .03-in. movement represents 7 inches on the target at 200 yards.

*Vertical adjustment.*—Three heights of blades are provided (.31-in., .34-in. and .37-in., marked "L," "N" and "H," respectively) for the correction of elevation and adjustment in fitting a new barrel.

*Protector foresight.*—When the protector is damaged or distorted, remove it from the barrel and restore to its original form by means of a brass drift or suitable punch, taking care to support the wings during the process.

*Fitting new barrel.*—When it is found necessary to fit a new barrel, the gun should be checked for head space and functioning of the mechanism. The gun will then be tested for accuracy and, when satisfactory results have been obtained, the foresight fitted will be marked for position. The barrel will then be numbered to agree with the number engraved on the body.

*Note.*—When supply facilities are not available for the replacement of barrels, the guns will be sent to store for exchange. This will also apply when no range is available for functioning and accuracy tests.

*Adjustment of barrel.*—Slight burrs may appear on the square locking threads through constant stripping and assembling; if assembly is affected in any way, the burrs should be removed with a smooth file, care being taken to remove as little metal as possible. It should be noted that edges of the threads are radiused, and the blend of the radius should be maintained.

If damaged or burred, the positioning groove on the underside of the barrel may require adjustment to ensure free assembly of the barrel. A smooth file should be used, care being taken that the width of the groove is not increased.

The barrel sleeve, which is secured to the barrel by means of a pin, must in no circumstances be removed; if for any reason the sleeve is unserviceable, the barrel should be reported for exchange (factory repair).

*Adjustment of barrel nut.*—The safety lug on the underside of the nut works with a cam action; the surface should therefore be kept smooth and, if any burrs are apparent, these should be removed with a fine oilstone and the polished surface restored. Care must be taken that the correct functioning of the lug is not affected. If any of the square locking threads are burred, particularly at the entrance, they should be adjusted in a similar manner.

*Adjustment of bipod.*—Burrs which may be present on the rear face and retaining ledges of the sleeve should be carefully removed to ensure correct engagement on the gas cylinder.

Legs which are bent should be carefully straightened. Both upper and lower legs are tubes, and care must be taken not to distort the tubular section, or functioning of the lower leg will be impaired.

If the stops on the legs are damaged or worn and fail to engage correctly, they should be carefully adjusted.

*Adjustment of body.*—The cylinder and locking shoulder are not interchangeable and should on no account be removed.

When either of these components become unserviceable, the gun must be reported for exchange (factory repair).

Should the prolongation on the front of the cylinder be bent, care must be taken to support the cylinder whilst straightening. Assembly of the prolongation into the gas block and regulator should then be checked.

If the retaining flanges on the cylinder are damaged or burred, they should be carefully adjusted with a smooth file to ensure free assembly of the bipod.

If the barrel positioning key is damaged, particularly at the front, adjustment should be made to ensure free assembly of the barrel, care being taken to remove no more metal than is necessary.

The bullet guides should be polished and free from sharp edges; if necessary, re-polish and blend to allow smooth entry of the cartridge into the barrel.

Remove with a smooth file any burrs that may affect functioning or assembly, taking care to remove the minimum amount required.

*Adjustment of backsight.*—If the backsight is loose in the dovetail slots, tighten the backsight screw. If this does not eliminate the movement, the gun should be reported for exchange (factory repair). On no account must swaging of the dovetails be resorted to.

Should the leaf be distorted, it should be straightened, care being taken that the cam is not damaged in the process. Leaves which are fractured or distorted, beyond repair, should be exchanged.

*Note.*—When either a new leaf or cam has been fitted, the gun should be shot for accuracy to ensure that the sighting is correct.

*Ejector.*—Should the ejector become bent or distorted, it should be straightened, care being taken suitably to support the arm. Smoke the nose of the ejector, and function the mechanism several times to ascertain that it does not foul the breech block.

*Adjustment of butt slide.*—If the guides are damaged or burred, especially at the front, they should be carefully oilstoned to ensure free assembly into the body; any burrs that may restrict the free recoil of the body must be removed.

*Adjustment of trigger mechanism.*—If any bends require adjusting, this should only be done by means of a fine oilstone. Should the mechanism not function correctly in its three

positions, the defective component can be located by interchanging components from an efficient gun. Any component found unserviceable should be replaced.

*Butt strap.*—Should this component become bent or distorted, remove the strap, support on a round piece of material and straighten by means of a raw-hide mallet or, if necessary, a brass drift.

*Breech block.*—Should a breech block be fractured or otherwise become unserviceable, the assembled block should be exchanged.

If the cartridge face becomes excessively fouled and cannot be cleaned by normal methods, grip the block in a vice and fit a wire brush (a worn cleaning rod brush will do) into the armourer's brace. Rotate the brush on the face until clean.

*Piston.*—Any burrs on the diameter of the piston head should be removed with a fine oilstone, care being taken not to radius the leading edge.

Where necessary, all sharp edges and burrs should be removed in a similar manner, special care being taken in adjusting the sear bent, cams and working faces.

*Butt.*—Should the recoil movement of the body or the free action of the butt plate be restricted owing to the swelling of the wood, adjust the wood until the fault is rectified.

*Protrusion of firing pin.*—Should the protrusion be excessive, reduce the point until within limits, taking care to maintain the form. If below the minimum, check with a new pin before reporting for exchange.

## Section 5.—Re-browning

This will be carried out under the same conditions as for small arms (see Part I, Chapter III and Appendix I).

The following lists give particulars of components which are browned or oil blacked and also of those which are polished after treatment. Components not mentioned in the lists are either polished completely, left as from heat-treatment, or sandblasted.

In cleaning off before browning or polishing after browning, care must be taken not to reduce the dimensions of any component.

To avoid unnecessary work in adjustment after browning, it is advisable to keep the parts, as far as possible, with the gun from which they were stripped.

*Browned and Polished.*

<i>Component.</i>	<i>Surfaces polished.</i>
Barrel	Breech end and bearing surface for carrying handle sleeve.
Body (with cylinder)	Axis holes, dovetail slots for sights, grooves for butt-slide and piston extension, slots for barrel nut and cocking handle slide, bearing face for top of breech block, and inside gas cylinder.
Body, backsight	Hole for detent and all working faces and holes.
Bracket, bipod	Ball portion and inside joint faces
Bracket, butt	Hole for pin and inside joint faces for handle.
Catch, handle, carrying	Hole for the stem.
Catch, nut, barrel	Axis hole.
Drum, backsight	Axis hole and engraved periphery.
Handle, cocking	Radial working face.
Leaf, backsight	Axis hole, working faces, and radial portion of bottom lug.
Nut, barrel	Internal diameter threads and interruptions.
Plate, butt	Axis hole, and faces for strap bracket.
Sleeve, bipod	Internal dia. for cylinder including interruptions, ball portion and axis hole.
Sleeve, handle, carrying	Hole for plunger, and faces for stem.
Slide, butt	Guides, axis holes, and all working faces, hole for piston buffer.
Slide, handle, cocking	} Axis hole and working faces.
Stem, handle, carrying	
Stem, handle, butt	} Hole for spring, and front portion of outside diameter.
Tube, spring, return	
Legs, bipod, upper	Axis hole and working faces of hinge.

*Browned.*

Bracket, catch, leg, bipod.  
 Catch, plate, butt.  
 Cover, ejection opening.  
 Cover, magazine opening.  
 Cover, slide, cocking handle.  
 Nut, handle, butt.  
 Protector, foresight.  
 Plate, grip, butt handle.  
 " " carrying handle.  
 Stem, strap, butt.  
 Strap, butt.  
 Legs, bipod, lower (with shoe).

*Oil Blacked.*

Blade, foresight.  
 Bracket, catch, plate, butt.  
 Cap, tube, return spring.  
 Catch, cover, ejection opening.  
 Catch, leg, bipod.  
 Detent, nut, return spring tube.  
 Nut, cam, backsight.  
 Nut, catch, carrying handle.  
 Nut, screw, bipod sleeve.  
 Nut, stem, handle, carrying.  
 Nut, stem, strap, butt.  
 Nut, tube, return spring.  
 Pin, catch, nut, barrel.  
 Pin, detent, change lever.  
 Pin, handle, cocking.  
 Pin, lever, tripping.  
 Pin, plug, carrying handle.  
 Pin, retaining, plunger, carrying handle.  
 Pin, plunger, trigger spring.  
 Pin, swivel, butt.  
 Plate, swivel, butt, left.  
 " " right.  
 Plug, handle, carrying.  
 Plunger, spring, trigger.  
 Post, spring, sear.  
 Screw, bracket, bipod.  
 Screw, grip, pistol.  
 Screw, handle, carrying.  
 Screw, protector, foresight.  
 Screw, shoulder, locking.



Screw, sight, back.  
 Screw, bracket, butt.  
 Screw, strap, butt.  
 Screw, swivel, butt.  
 Stem, buffer, butt plate (with cap).  
 Stop, leg, bipod.  
 Swivel, butt.  
 Trigger (finger piece only).

*Oil Blacked and Polished.*

<i>Component.</i>	<i>Surfaces polished.</i>
Catch, magazine	Axis hole.
Lever, change	Hole for detent, diameter, and trigger lever face.
Pin, catch, magazine	} External diameter, excluding head.
Pin, locking, body	
Pin, mounting, front	} External diameter.
Pin, mounting, rear	
Pin, sear	} External diameter, excluding cannellure and head.
Pin, trigger	
Screw, sleeve, bipod	External diameter, excluding head and screwed portion.

### Section 6.—Description and Use of Tools and Gauges

*Cleaner, gas regulator, Bren 303-in. M.G., Mk. I.*—This consists of five reamers, each bearing an identity number, assembled to a split ring. Nos. 1 to 4 are for cleaning the holes in the gas regulator, No. 1 being for the smallest hole and No. 4 for the largest. No. 4 is also for cleaning the gas vent in the barrel and No. 5 for the hole in the boss of gas block which enters the gas cylinder. They may require occasional sharpening with an oilstone.

*Gauges for testing cartridge head space.*—The gauges for rifle No. 1, .064-in. and .074-in., will be used in accordance with the instructions given in Section 3.

*Gauge, firing pin point, Bren 303-in. M.G., Mk. I.*—This gauge, the dimensions of which are high .045-in., low .04-in., is applied to the face of the breech block when the piston post abuts the inclined stop face at the front of the recess on the underside of the breech block. The piston and breech block must be removed from the gun to enable the gauge to be applied. When the protrusion is greater than the high limit, the point will be adjusted, the form at the front being maintained. When it is less than the low limit, the firing pin will be exchanged.

## CHAPTER II THE MOUNTING

*Drawing D.D.(E) 1925 (see Appendix II)*

### Section 1.—Stripping and Assembling

The following instructions cover complete stripping, which is usually necessary only during repair or replacement of certain parts.

It is essential, when more than one mounting is being stripped, that the parts of each be kept separate.

*To remove the traversing segment.*—Remove the four split pins and nuts from the segment screws and remove the screws. Remove the segment and remaining traversing side stop screw.

*To assemble the traversing segment.*—Reverse the order of stripping.

*To remove the front inner leg, catch, spring and clamping handle.*—Drive out the fixing pin and unscrew the clamping screw nut. Remove the clamping screw from the right, taking care to control the catch and spring. Remove the catch and spring and withdraw the inner leg.

*To assemble the front inner leg, catch, spring and clamping handle.*—Replace the inner leg complete with the A.A. bracket into the outer leg, ensuring that the catch serrations are to the front. Replace the spring and catch, seeing that the radial end of the catch is to the top and the short arm of the spring against the catch toward the radial end. Compress the spring by exerting pressure on the catch, insert the clamping screw from the right, taking care that it passes through the loop of the spring. Replace the clamping screw nut and position to receive the fixing pin. Assemble the pin and lightly rivet the ends.

*To remove the A.A. bracket.*—Drive out the fixing pin from the A.A. bracket nut and unscrew the nut. Remove the nut and bracket.

*To assemble the A.A. bracket.*—Reverse the order of stripping, noting that the hook, on which the gun assembles, faces the shoe. Lightly rivet the fixing pin.

*To remove the pivot and A.A. leg catch.*—Remove the pivot screw from the underside and withdraw the pivot washer and

stop. Hold the A.A. leg catch to prevent the spring from forcing it out and withdraw the pivot. The A.A. leg catch and spring can now be withdrawn from the right.

*To assemble the pivot and A.A. leg catch.*—Insert the spring and A.A. leg catch into the frame bracket, with the knurled end of the catch on the outside and the cut away portion, to clear the pivot, to the rear. Press the catch inward and insert the pivot from the top, observing that the projection on which the gun is assembled points to the rear. Replace the stop on the lower end of the pivot, noting that it is assembled correctly on the flats. Replace the washer and pivot screw, taking care that the stop is not dislodged from the flats. Check the rotary movement of the pivot for the functioning of the stop.

*To remove the front outer leg from the frame.*—Drive out the fixing pin from the front leg joint screw nut and remove the nut. Unscrew the clamping handle and withdraw the spring and leg from the left. The joint screw can now be withdrawn from the right.

*To assemble the front outer leg to the frame.*—Replace the joint screw into the frame bracket from the right side and assemble the leg on the screw. Assemble the spring and clamping handle to the joint screw. Tighten the clamping handle in order to position the joint screw nut correctly to receive the fixing pin. When assembled, lightly rivet the ends and ensure that the clamping handle does not foul the pin.

*To remove the butt handle clips from the frame.*—Unscrew the two screws, withdraw the distance-piece and spring the clip from the frame tube.

*To assemble the butt handle clips to the frame.*—Spring the clip over the frame, ensuring that the positioning pin is located in the hole in the frame. Replace the distance-piece, with the radial cut away portion toward the tube; secure by means of the two screws.

*Note.*—The clips are identical and the sequence of stripping and assembling applies to both.

*To remove the upper and lower A.A. legs.*—Pull out the A.A. leg retainer to its fullest extent and withdraw the leg from the frame.

*To assemble the upper and lower A.A. leg.*—Reverse the order of stripping, noting that the retainer correctly engages the hole in the leg. The legs are normally carried in the right and left tubes, respectively.

*To remove the A.A. leg retainer.*—Remove as much of the riveting as possible and grip the head of the retainer with a suitable clamp. Insert a screwdriver into the hole on the inside of the frame and engage the slot in the retainer. Unscrew the retainer until the head is detached, remove the retainer and spring.

*To assemble the A.A. leg retainer.*—Place the spring on the retainer and insert through the hole in the frame tube. Engage a suitable screwdriver into the slot of the retainer and press the retainer into the joint stud until the threaded end is visible in the opening of the clamping handle. Assemble the retainer head and lightly rivet the end or secure by means of centre punching.

*Note.*—If necessary, grip the head in a suitable clamp whilst finally screwing home the retainer, and ensure that the clamping handle is assembled before riveting the plunger.

*To remove the rear legs from the frame.*—Drive out the fixing pin in the rear leg joint stud nut and unscrew the nut. Unscrew the clamping nut and remove the spring and leg.

*To assemble the rear legs to the frame.*—See that the correct leg is assembled, this being determined by the position of the shoe. Replace the spring and clamping handle, tightening the handle to allow the correct positioning of the nut for the assembly of the fixing pin; lightly rivet the ends.

*Note.*—The fixing pin does not pass through the centre of the nut.

*To remove the rear leg joint studs.*—Remove the stud fixing screw and unscrew the stud.

*To assemble the rear leg joint studs.*—Reverse the order of stripping, ensuring that the shoulder abuts the bracket and the recess is in position to allow the assembly of the stud fixing screw.

*To remove the elevating gear from the tripod.*—Remove one of the traversing slide stop screws and withdraw the elevating gear from the slide.

*To assemble the elevating gear to the tripod.*—Reverse the order for stripping.

*To strip the elevating gear.* Drawing D.D.(E) 1925 (Group B).—Remove the elevating sleeve plug screw and withdraw the plug. Remove the tumbler and traversing slide from the elevating sleeve, push out the tumbler pin and remove the tumbler.

Unscrew the elevating sleeve clamping handle (left hand thread), drawing it to the right, as required, to clear the stops.

*Note.*—It is not necessary to remove the clamping handle retaining pin for normal stripping. If it is removed, the position to give correct clamping may be affected.

Remove the elevating sleeve clamping screw and collar by withdrawing from the left and right, respectively, and the elevating sleeve key through the sleeve hole.

Mark the position of the traversing slide clamping handle with respect to the screw to assist re-assembly, drive out the fixing pin and remove the handle from the splines, using a brass drift if necessary. Unscrew the clamping screw and nut and remove from the underside; remove the nut from the screw.

Position the holes in the elevating nut clamping screw nut in alignment with the collar retaining pin and with a suitable punch drive out the pin. Remove the collar, unscrew the clamping screw nut and withdraw the screw in the opposite direction.

Remove the four elevating nut ring screws and the ring from the elevating sleeve. Grasp the elevating nut and remove the sleeve downward. Remove the elevating screw collar pin and collar. Unscrew the elevating nut from the elevating screw and remove the cap.

*To assemble the elevating gear.*—Slide the elevating nut cap onto the elevating screw, noting that the larger diameter hole is on the underside and that it is correctly positioned in the keyway with its boss uppermost; assemble the elevating nut to the elevating screw, replace the elevating screw collar and pin. Position the cap on the elevating nut and insert the clamping screw into the housing provided in the cap. Assemble the clamping screw nut and secure with collar and pin.

With the elevating screw horizontal, the clamping screw nut to the front and left of the elevating nut, engage the elevating screw collar pin into the internal keyway of the sleeve and assemble over the elevating screw, ensuring that the external keyway is at the top and the flange abuts the underside face of the elevating nut. Replace the elevating nut ring with the recess foremost and assemble the four retaining screws.

Replace the nut on the traversing slide clamping screw and insert from the underside of the slide. Replace the slide clamping handle on the splines and secure with the pin, taking care to assemble to give the correct position of the handle, *i.e.* when the face of the nut is flush with the underside face of the traversing slide the handle should be pointing forward.

With the clamping handle stop on the underside and projecting to the right, insert the elevating sleeve key into the large hole of the tumbler and position it in the smaller hole to allow the sleeve clamping screw to pass through. Assemble the screw from the left and the collar to the screw from the right. Assemble the elevating sleeve clamping handle with the offset to the right, noting that it is threaded left hand. It will be found necessary to draw the screw to the right to enable the projection on the handle to clear the stop whilst obtaining the correct position.

Insert the assembled tumbler, with the elevating sleeve clamping handle on the right, between the projections on the slide, ensuring that the radiused corner is at the bottom, thereby allowing the tumbler to have free upward movement.

Insert the tumbler pin with the recess to the rear, assemble the elevating sleeve to the tumbler, taking care that the elevating sleeve key and the tumbler pin are in alignment to receive the sleeve. Replace the elevating sleeve plug, ensuring that the screwed hole corresponds with the larger diameter hole in the sleeve. Assemble the plug screw. Check the clamping handles and clamping nut for correct position for functioning.

## Section 2.—Examination

See that the number of the mounting is distinctly marked on the frame bracket, *i.e.* the polished face adjacent to the A.A. leg catch.

Examine generally for external damage and wear.

Adjust the mounting to the normal firing position and securely clamp the legs. Place a serviceable gun known to be in good condition on the mounting. By lightly holding the front of the barrel sleeve, apply sufficient pressure, up, and then down, to ascertain the play in mounting joints, elevating gear, etc., in both directions.

If the play is considered excessive and cannot be readily located and remedied, the following points should be examined for wear or adjustment—

1. Mounting pin holes.
  2. Pivot, for the security of the screw.
  3. Elevating gear for play generally, especially the elevating screw in the nut, and the tumbler pin and holes.
  4. Security of the traversing segment to the frame.
- For adjustment or repair of the above see Section 3.

When it is found that, after all adjustment possible has been made, the total vertical play is still excessive and a new elevating screw and/or nut is unlikely to overcome the defect, the mounting must be exchanged (factory repair).

When the condition is satisfactory, continue as follows—

Examine the butt handle clips for security and see that a butt handle assembles in the clips.

Examine the leg joints by tightening the clamping handles and testing for play in the serrations.

Examine the A.A. bracket for damage and wear and see that it rotates freely.

Ensure that it can be retained correctly by the front inner leg catch and that a gun can be readily assembled at the extremity.

Test the A.A. bracket nut and pin for security.

Examine the front inner leg for distortion and free movement in the outer leg, and see that the catch engages the serrations correctly.

Examine the pivot for security and see that the stop is fitted correctly on the flats of the pivot. Test for rotation and see that it does not rotate after the stop abuts the frame bracket. Examine the gun joint for burrs and damage and test for fit by assembling a serviceable gun fitted with a mounting pin which is not unduly worn. Remove the A.A. legs from the frame and examine for distortion or damage. See that they fit together and assemble correctly in the A.A. position of the tripod. Ascertain that the catch retains the leg satisfactorily and that the faces are smooth and allow free assembly of the leg. Replace the legs in their respective frame tubes and test the retainers for correct functioning, and see that they enter the holes in the A.A. legs.

Test the traversing segment for security to the frame and see that the stop screws are not damaged. Examine the segment for damage or burrs and see that the graduations are clearly discernible.

Check the traversing slide for free movement on the segment and see that by tightening the slide clamping handle the slide is held rigidly.

Test the elevating sleeve for free vertical movement in the tumbler, when unclamped, and see that the clamping handle functions correctly. Test the sleeve plug for security.

See that the four screws in the clamping nut are secure, rotate the nut and examine for vertical play in the threads of the screw and nut. Check the clamping nut for correct functioning.

Remove the complete elevating gear from the traversing

segment and examine the guides of the traversing slide and the face of the clamping screw nut for wear or damage.

Examine all tubular members for distortion and joints for security. Dents are not detrimental, provided that the tubes are straight and the strength is not impaired.

Examine generally for the condition of the enamel.

### Section 3.—Repairs and Adjustments

#### *General.*

In shooting with the gun mounted on the tripod, accuracy depends largely on the mounting; it is therefore essential that the mounting should be kept in good condition. The quarterly examination should be thoroughly carried out and wear and play taken up wherever possible. It should be borne in mind that, in view of overhead fire, vertical play must not be excessive; therefore every endeavour must be made to prolong the life of the mounting to the utmost before factory repair becomes necessary. Cleaning and oiling must invariably be attended to.

When the number of the mounting has been omitted or obliterated, it will be marked with a serial number, which should be obtained on application to the C.I.S.A., Enfield Lock.

#### *Legs and tubes.*

When the tubes of legs or frame are not too badly bent, they should be heated in a forge to a red heat and straightened, care being taken that the tubes are not unduly distorted or the joints affected during the process.

The work of straightening will be facilitated by the employment of hard wood blocks, grooved to suit the tubes. When legs or frame tubes are badly bent or dented beyond repair, the legs in the case of the former must be exchanged and in the case of the latter the mounting reported for exchange (factory repair).

After straightening, always ensure that assembly has not been affected in any way, i.e. that the upper and lower A.A. legs and the front inner leg function freely in their tubes.

The serrations on the leg and frame joints are case-hardened and therefore little trouble should be experienced from wear or burrs. If the serrations do not match correctly, the cause will probably be due to the studs at the rear joints or the screw at the front joint being bent, in which case they should be removed and straightened, care being taken to avoid damage to the threads.



*A.A. bracket.*—When a new A.A. bracket is fitted, ensure that the play between the bracket and nut is not excessive.

*Butt handle clips.*—If the butt handle is not retained satisfactorily, with the clip screws fully tightened, the clips should be closed in. If this adjustment does not remedy the fault, a new clip should be fitted.

*Pivot.*—If vertical play exists when the screw is fully home, a new spring washer must be fitted or, as a temporary measure, the ends of the washer can be forced outwards in opposite directions. When replacing the pivot or when a new one is fitted, always ensure that the stop fits correctly on the flats of the screw.

*Leg clamping handles.*—Should the leg serrations become disengaged when the handles are completely unclamped, a new spring should be fitted. Unserviceable handles must be replaced. The replacement of springs or clamping handles on the rear legs necessitates the removal of the A.A. leg retainer head. When stripping the head, first remove the A.A. leg from the frame and the minimum amount of metal from the end of the retainer.

*Rear leg joint studs.*—When a new stud (which is without the recess for the fixing screw) is fitted, assemble to the frame and mark off the position of the recess. Remove the stud and cut the recess, taking care to make a good fit for the head of the screw in order to prevent any tendency of the stud to slacken.

*Sling dees.*—Bent or distorted dees should be straightened, but, if they are broken off or otherwise unserviceable, the mounting must be sent to ordnance workshop for fitting of new dees.

*Traversing segment.*—If it is loose on the frame, adjust by tightening the four screws and secure by means of the castellated nuts and split pins. Slight distortion of the segment can be adjusted, care being taken to ensure that the slide operates freely after such adjustment. If the traversing slide guides are burred or damaged, they should be adjusted with a smooth file until the traversing slide functions freely without slackness. Finish by re-polishing to ensure a smooth surface.

*Adjustments of traversing slide clamping handle.*—If the clamping handle does not lock the slide when fully clamped, drive out the retaining pin, remove the handle from the screw and replace in such a position on the serrations as to give correct functioning.

Should the guides of the traversing slide require adjusting for burrs or slight damage, it should be noted that the guides are radial.

*Adjustment of elevating sleeve clamping handle.*—If the clamping handle does not lock the sleeve when fully clamped, drive out the retaining pin, remove the handle from the nut and replace in such a position on the serrations as to give correct functioning.

Handles which become bent should be removed and straightened. Burrs or slight damage, affecting functioning, should be removed or adjusted.

#### Section 4.—Re-browning and Re-painting

This will be carried out under the same conditions as for small arms (*see* Part I, Chapter III and Appendix I).

To avoid unnecessary work in adjustment after browning, it is advisable to keep the parts as far as possible with the mounting from which they were stripped.

All external surfaces (excluding the elevating gear) will be painted, as necessary, with the exception of the following:—

Leg, A.A. lower	Browned, the shoe only being painted.
" " upper	" the guides at the top for assembling to the frame bracket to be left polished.
Leg, front, inner	Serrated tube to be browned, bearing surfaces for the gun on A.A. bracket to be left polished.
" " outer	Bearing faces for front inner leg catch to be left polished.
Segment, traversing	Working surfaces to be left polished.
Screw, traversing segment	Browned or oil-blackened.
Nut, screw traversing segment	" " " "
Pin, split, nut, screw traversing segment	" " " "
Screw, stop, traversing slide	" " " "
Catch, leg, A.A.	Working surfaces to be left polished.
Pivot	Working faces, and hole for mounting pin, to be left polished.
Stop, pivot	Browned or oil-blackened.
Screw, pivot	" " " "
Washer, pivot	" " " "
Bracket, frame	Faces and guides for A.A. leg to be left polished.

*Elevating gear and traversing slide.*

All components will be browned or oil-blackened, as necessary, with the exception of the following—

Cap, nut, elevating	Hole to be left polished.
Handle, clamping, elevating sleeve	Externally, only.
Handle, clamping, traversing slide	
Pin, tumbler	On "ends only," diameter to be left polished.
Ring, nut elevating	Face of recess to be left polished.
Nut, elevating	Browned, face of recess and working faces (except threads) to be left polished.
Screw, elevating	Browned, joint faces and hole to be left polished.
Sleeve, elevating	Browned, keyways and hole, faces of collar and outside dia. above collar to be left polished.
Slide, traversing	Browned, holes and working faces to be left polished.
Tumbler	Browned, holes for tumbler pin and elevating sleeve to be left polished.
Screw, clamping, traversing slide	Oil-blackened, except serrations.
Screw, plug, elevating sleeve	Oil-blackened.
Screw, ring, elevating nut	" "
Collar, screw, elevating	Left bright.
Key, sleeve, elevating	Not to be treated in any way but should be kept well lubricated.
Nut, screw, clamping elevating sleeve	
Nut, screw, clamping traversing slide	
Pin, collar, elevating screw	

## CHAPTER III

## ACCESSORIES

*Drawing D.D.(E) 1924 (see Appendix III)*

*Box, small parts, M.G., No. 4, Mk. I.*

*Examination.*—Examine the box for distortion and damage and see that the contents of the box are correct (see Equipment Regulations, Part I).

*Repair.*—Any box damaged in such a manner that the components are not safely retained should be exchanged.

*Box, magazine, Bren 303-in. M.G., Mk. I.*

*Examination.*—Examine the box for damage and distortion, giving special attention to the welded corners, joints, separators and hinge. Test the carrying handle bracket catch, and the catch hook for security. Examine the carrying handle for wear, serviceability and security. Fill the box with serviceable magazines and, whilst doing so, test the separators to ensure that the magazines assemble freely and are correctly retained. See that the lid closes correctly and that the catch and hook function satisfactorily.

*Repair and adjustment.*—Should the box be slightly distorted, it can be adjusted by suitably supporting the distorted part and straightening with a raw-hide mallet, care being taken not to strain the welding. If the projections of the separators are bent or distorted, prepare a piece of hard wood having a suitable slot and, with this as a lever, straighten the projections. A magazine may be used as a gauge in carrying out this repair to ensure that the correct distance between the separators is maintained. If a carrying handle becomes unserviceable, a new one must be fitted, the ends being so riveted as to be positioned on the underside.

Should a catch hook be distorted or bent, it must be adjusted until the catch functions correctly. When badly distorted, excessively damaged or broken away at the joints, or when either the catch link bracket or carrying handle bracket is broken or otherwise unserviceable, the box must be exchanged.

*Can, oil, M.G., Mk. III.*

*Examination.*—Examine for damage and see that no leakage occurs with the cap and washer assembled. Ensure that the screwed neck joint is secure and that the brush is serviceable.

*Repair.*—If a brush or washer is unserviceable, a new one should be fitted. When leakage cannot be remedied by the fitting of new components, the can should be exchanged.

*Chest, Bren 303-in. M.G., Mk. I.*—The care, repair of fittings and repainting is as for other chests of a similar character.

*Filler, magazine, Bren 303-in. M.G., Mk. I.*

#### *Stripping and Assembling*

*General note.*—In stripping or assembling any component of the filler, care must be taken that no undue force is applied; otherwise damage to the aluminium alloy castings will result.

*To strip the clamping arm.*—Remove the split pin from the clamping arm axis pin, withdraw the axis pin and remove the arm.

*To assemble the clamping arm.*—Insert the hinge portion of the arm between the projections on the body, noting that the button is on the underside of the arm; replace the axis pin and split pin.

*To strip the clamping screw and button.*—The screw and button should not be removed from the clamping arm except for replacement, the end of the screw being riveted over to retain the button. Remove the riveting and unscrew the clamping screw, this action disengaging the button. Remove the screw completely.

*To assemble the clamping screw and button.*—Screw the clamping screw into the arm, replace the button. Support the handle of the screw on a suitable piece of hard wood or lead, rivet over the end of the screw until the button is securely held in position. The riveting should not be excessive, as the button must be free to rotate.

*To strip the operating lever with operating handle.*—Remove the split pin from the operating lever axis pin and lift out the axis pin. Push the lever forward clear of the groove in the body; remove the lever and handle complete. Drive out the handle axis pin and remove the handle.

*To assemble the operating lever and operating handle.*—Replace the handle on the lever with the hollow portion toward the left. Support the handle and drive home the axis pin. Insert the operating lever, engaging the radial runner in the guide in the body. Position the lever and assemble the axis pin, ensuring that the split pin hole is in alignment with the slot on the underside of the body; replace the split pin.

*To strip the bullet guide.*—Unscrew the two bullet guide screws and lift out the guide.

*To assemble the bullet guide.*—Replace the guide on the body with the projection toward the opening for the magazine and secure by means of the two cheese-headed screws.

*To strip the magazine catch and spring, and charger stop.*—Unscrew the two round-headed screws and remove the spring, withdraw the charger stop. If the stop is tight, removal can be facilitated by applying pressure from the inside of the body with a piece of hard wood. Remove the split pin from the magazine catch axis pin and withdraw the pin from the top; withdraw the catch.

*To assemble the charger stop, magazine catch and spring.*—Replace the catch with the stepped face to the outside; assemble the axis pin, ensuring that the split pin hole is in alignment with the slot on the underside; replace the split pin. Insert the charger stop with the inclined face toward the operating lever. With the magazine catch in the open position, replace the spring and secure with the two round-headed screws.

*To strip the magazine register pin.*—This pin should only be removed for renewal or adjustment. Care must be taken suitably to support the body, and the pin should be driven out from the underside by means of a punch slightly less in diameter than the hole in the body.

*To assemble the magazine register pin.*—Reverse the order of stripping, noting that the ends of the pin should be flush with the body faces.

*Examination.*—Examine the components generally for excessive wear, damage or fracture.

Examine the charger stop for damage on the stop faces and for fit in the body. Test the operating arm for free movement and see that the tip does not foul the cartridge gap in the body. Examine the bullet guide for security, wear and damage. See that the filler can be correctly secured to an ammunition box and that the clamping screw functions correctly. Test the button for security and see that it rotates freely on the end of the clamping screw.

Examine the filler for functioning by filling several magazines, using dummy cartridges loaded in chargers. Test the magazine catch and spring for functioning and for the retention of the magazine.

Finally note that the filler folds correctly.

*Repairs and adjustments.*—Repairs, other than the removal of burrs and normal adjusting to ensure satisfactory functioning, should not be attempted.

If any component, other than those demandable, as shown in V.A.O.S., becomes unserviceable, the filler should be exchanged (factory repair).

*Finish.*—All steel components should be browned or oil-blackened as necessary.

*Magazine, Bren 303-in. M.G., Mk. I.*

*Stripping and assembling.*

1. *To remove the magazine bottom plate, spring and platform.*—Hold the magazine vertically in the left hand with the front toward the body. With the nose of a bullet depress the bottom plate retainer and draw the plate forward until the hole is clear of the retainer. Remove the cartridge and finally withdraw the plate by sliding it along the guides of the magazine case; care must be taken to control the magazine spring while the plate is being removed. Remove the spring and platform.

2. *To remove the spring and guide from the platform.*—Grip the platform with the left hand and, with the finger and thumb of the right hand, hold the first full leaf of the spring by its bends; compress the spring until the first leaf is parallel with the platform and with a slight radial movement remove the end of the spring from the slot in the platform. Disengage the lug of the guide and remove.

3. *To remove the retainer from the spring.*—With a sliding movement gently ease the raised stop of the retainer past the spring and remove.

4. *To assemble the retainer to the spring.*—Insert from the front the shortest end leaf into the two guides of the retainer. Slightly compress the leaf and at the same time slide the retainer onto the spring until the stop is positioned behind the bend of the spring.

5. *To assemble the guide and spring to the platform.*—Engage the lug on the platform guide into the slot on the underside toward the rear of the platform. Grip the spring as for stripping and insert the end into its housing and with a radial movement slide forward as far as it will go.

6. *To assemble the spring and spring platform.*—Insert the platform from the top of the magazine and push through the case until the platform is positioned correctly, taking care not to distort or disengage the spring.

7. *To assemble the magazine bottom plate.*—Hold the case in the left hand, compress the spring and hold with the left thumb. Slide the bottom plate onto the case, ensuring that it is correctly positioned in its grooves; release the pressure on the spring, as necessary, and slide the plate as far as it will go, noting that the retainer engages the hole in the plate.

*Cleaning.*—After firing, the magazine platform should be cleaned and, if necessary, re-polished on the cartridge face. Periodically the magazine spring should be removed, dry cleaned and re-oiled with clean oil. If necessary, the spring should be dipped in boiling water to remove any excessive grease or fouling. The remainder of the magazine should be dry cleaned and the inside of the casing lightly oiled. A dirty magazine is liable to cause malfunctioning.

*Examination.*

(i) Examine the platform and ensure that it is positioned correctly by the pressure of the spring.

(ii) Test the functioning of the spring by compressing it in the case, using a piece of hard wood; the action should be smooth and free. (Note.—Do not suddenly release a compressed spring, or damage to the lips will result.) Should the action be tight or irregular, the platform should be examined for burrs and the spring and case for distortion.

(iii) Examine the lips of the case for distortion and burrs.

(iv) Examine the front side of the casing (just above the front engagement lip) for indentation or perforations, these being caused mainly through faulty magazine filling (rim behind rim).

(v) Examine the front and rear engagement lugs, ensuring that they are not damaged or badly worn.

(vi) Ensure that the cartridge face of the platform is smooth and polished and that the slot at the rear, necessary for the passage of the ejector, is not damaged or distorted.

(vii) After detail inspection, fill the magazine with 30 dummy cartridges and assemble to a gun to test functioning with the change lever at auto. or single shots. Also test to see that, when the last round has been ejected, the platform retains the breech mechanism to the rear of the sear.

*Repairs and adjustments, etc.*

*To adjust distorted lips.*—Prepare a piece of hard wood to assemble in the magazine case, one end being shaped to fit the internal radius of the lips of a serviceable magazine. Position



the case on the wood and grip the latter in a vice. With a raw-hide mallet or, if necessary, the copper hammer of the combination tool, restore the shape of the lips to their original form.

After adjustment the magazine must be tested for functioning.

*To rectify indentation or slight perforation in front of magazine.*—Prepare a suitable hard wood block to enter the case. Grip the wood in the vice and lightly tap the deformed surface back to the original position, taking care that the welding of the case is not affected.

Magazines should not be sentenced unserviceable because of perforations, provided that they function correctly, but the attention of A.I.A. or C.I.S.A.'s examiners should be drawn to these magazines on their periodical visits.

*Re-browning.*—Re-browning, as required, will be carried out under the same conditions as for small arms (see Part I, Chapter III and Appendix I).

All parts of the magazine will be re-browned as necessary, with the exception of the magazine spring platform, which is sand-blasted, the cartridge face being polished.

*Plug, clearing, .303-in. M.G.*

*Stripping and assembling.*—Unscrew the head and withdraw the plunger from the opposite end of the stem. Assemble in the reverse order.

*Examination.*—Examine the head for damage and see that the shoulder is slightly radiused to obviate damage to the chamber when the plug is inserted. Using a prepared separated case, test the plug for functioning, noting that the stem firmly grips the case.

*Repair.*—Should the plug not function correctly, due to the stem not expanding sufficiently, carefully open out the slots with a screwdriver or suitable piece of metal.

When any component is found to be unserviceable, the plug should be exchanged (factory repair).

*Rod, cleaning, cylinder, Bren .303-in. M.G., Mk. I—Mop, rod, cleaning, cylinder, Bren .303-in. M.G., Mk. I and Brush, rod, cleaning, cylinder, Bren .303-in. M.G., Mk. I.*

These should be kept in good condition and, when unserviceable, must be exchanged.

*Sling, Bren .303-in. M.G., Mk. I.*

*Examination.*—Examine the webbing for wear and damage. Ensure that both hooks function correctly.

*Repair.*—In the event of a hook being unserviceable, a new one should be indented for and fitted to the existing sling. Should the webbing be unserviceable, a new "sling, rifle, web" must be fitted.

*Tool, combination, Bren .303-in. M.G., Mk. I.*

*Stripping and assembling.*—To remove the screwdrivers, drive out the screwdriver pin (noting that it is lightly riveted) and withdraw the screwdriver.

To remove the copper hammer, grip the hammer in a vice and unscrew, using the tool as a lever.

Assemble in the reverse order.

*Examination.*—Examine the copper hammer for security and damage. Test the screwdriver pin for security and the screwdrivers for wear or damage. See that the key for the gas regulator is not damaged and that it freely fits the slots in the gas regulator. The keys for the pistol grip screws and the slots for the return spring tube cap should be examined for burrs and tested for correct functioning. Examine the tool generally for wear or damage, paying particular attention to the cutting edges of the reamer.

*Repairs and adjustments.*—If the face or diameter of the copper hammer is damaged, it can be adjusted by filing, care being taken to remove the minimum of metal necessary. When unserviceable a new hammer should be indented for and fitted locally.

Screwdrivers which are broken or otherwise unserviceable must be replaced on indent and fitted locally.

If the cutting edges of the reamer are worn or blunt, the edge can be restored with a fine oil-stone. When the reamer is unserviceable, the tool must be exchanged.

Remove all burrs that may affect functioning or handling.

*Finish.*—The body of the tool is sand-blasted and the screwdrivers left as from heat-treatment.

*Wallet, Bren .303-in. M.G., Mk. I.*—This must be kept in good condition; otherwise loss of the contents may result.

## APPENDIX I

## GUN, MACHINE, BREN, .303-IN., MK. I

## List of Parts

(for identification purposes in conjunction with drawing  
D.D.(E) 1923 (Two sheets). .

Part No.	Designation,	Part No.	Designation
<i>Group A</i>			
1.	Tube, spring, return	40.	Buffer, piston
2.		41.	Screw, grip, pistol
3.	Cover, ejection opening	42.	Buffer, butt plate
4.	Slide, butt	43.	Plate, swivel, butt, right
5.	Spring, return	44.	Detent, nut, return spring tube
6.	Cap, tube, return spring	45.	Spring, stem, strap, butt
7.	Screw, retaining, mounting pins (2)	46.	Strap, butt
8.	Butt	47.	Pin, plunger, trigger spring
9.	Catch, cover, ejection opening	48.	Trigger
10.	Plunger, trigger spring	49.	Spring, sear
11.	Pin, sear	50.	Stem, handle, butt
12.	Pin, lever, tripping	51.	Pin, detent, change lever
13.	Nut, handle, butt	52.	Nut, tube, return spring
14.	Spring, detent, lever, change	53.	Spring, buffer, piston
15.	Collar, friction, piston buffer	54.	Grip, pistol
16.	Screw, bracket, butt (2)	55.	Swivel, butt
17.	Pin, mounting (front and rear) (2)	56.	Screw, swivel, butt (2)
18.	Pin, swivel, butt	57.	Catch, plate, butt
19.	Cover, slide, cocking handle	58.	Nut, stem, strap, butt
20.	Spring, catch, plate, butt	59.	Stem, strap, butt
21.	Plate, butt	60.	
22.	Pin, catch, cover, ejection opening	<i>Group B</i>	
23.	Pin, trigger	61.	Nut, cam, backsight
24.	Lever, tripping	62.	Detent, drum, backsight
25.	Spring, trigger	63.	Leaf, backsight
26.	Plate, grip, butt handle	64.	Plunger, handle, cocking
27.	Lever, change	65.	
28.	Nut, buffer, piston	66.	Spring, retainer, pin, magazine catch
29.	Bracket, butt	67.	Ejector
30.	Spring, buffer, plate, butt	68.	Body (with cylinder, gas)
31.	Plate, swivel, butt, left	69.	Pin, split, nut, backsight
32.	Bracket, catch, butt plate	70.	Spring, detent, drum, backsight
33.	Screw, strap, butt	71.	Cover, magazine opening
34.	Spring, catch, cover, ejection opening	72.	Pin, handle, cocking
35.	Post, spring, sear	73.	Nut, barrel (with stop)
36.	Sear	74.	Retainer, pin, catch, magazine
37.	Grip, handle, butt	75.	Catch, magazine
38.	Detent, lever, change	76.	Screw, shoulder, locking
39.	Rod, spring, return	77.	Retainer, nut, barrel
		78.	Plunger, retainer, barrel nut

Part No.	Designation	Part No.	Designation
79.	Spring, retainer pin, locking body	122.	Sleeve, handle, carrying
80.	Drum, backsight	123.	{ Pin, plug, carrying handle " retaining, plunger " carrying handle
81.	Screw, sight, back	124.	Plate, grip, carrying handle
82.	Spring, plunger, sight, back	125.	Catch, handle, carrying
83.	Slide, handle, cocking	126.	Nut, stem, handle, carrying
84.	Spring, plunger, handle, cocking	127.	Screw, protector, foresight
85.	Spring, catch, nut, barrel	128.	Retainer, regulator, gas
86.	Pin, catch, nut, barrel	129.	Regulator, gas
87.	Pin, catch, magazine	130.	Plunger, handle, carrying
88.	Spring, catch, magazine	131.	Nut, catch, carrying handle
89.	Shoulder, locking	132.	Stem, handle, carrying
90.	Spring, retainer, nut, barrel	133.	
91.	Retainer, pin, locking, body	134.	
92.	Pin, locking, body	135.	
93.	Body, backsight	136.	
94.	Cam, backsight	137.	
95.	Plunger, sight, back	138.	
96.	Handle, cocking	139.	
97.	Catch, nut, barrel	140.	
98.			
99.			
100.		<i>Group E</i>	
	<i>Group C</i>	141.	Retainer, stem, piston
101.	Block, breech	142.	Extension, piston
102.	Spring, stay, extractor	143.	Cotter, piston post
103.	Pin, firing	144.	Post, piston
104.	Spring, pin, firing	145.	Stem, piston
105.	Stay, extractor	146.	Plunger, post, piston
106.	Extractor	147.	Spring, post, piston
107.	Retainer, pin, firing	148.	
108.		149.	
109.		150.	
110.		<i>Group F</i>	
	<i>Group D</i>	151.	Stop, leg, bipod
111.	Sleeve, barrel	152.	Sleeve, bipod
112.	Barrel	153.	Spring, catch, leg, bipod (2)
113.	Protector, foresight	154.	Catch, leg, bipod (2)
114.	Spring, plunger, handle, carrying	155.	Bracket, bipod
115.	Pin, sleeve, barrel	156.	Screw, bracket, bipod (2)
116.	Plug, handle, carrying	157.	Leg, bipod, upper, left
117.	Screw, handle, carrying	157A.	" " " right
118.	Grip, handle, carrying	158.	" " " lower, left
119.	Spring, catch, handle, carrying	158A.	" " " right
120.	Blade, foresight (L.N. and H)	159.	Nut, screw, bipod sleeve
121.	Pin, retainer, gas regulator	160.	Screw, sleeve, bipod
		161.	Pin, catch, leg, bipod (2)
		162.	Spring, bipod

# APPENDIX II

## MOUNTING, TRIPOD, BREN 303-IN. M.G., MK. I

List of Parts  
(for identification purposes in conjunction with drawing  
D.D. (E) 1925)

Part No.	Designation	Part No.	Designation
<i>Group A</i>			
1.	Screw, clip, butt handle (4)	36.	Screw, fixing, stud, rear leg joint (2)
2.	Clip, butt handle (2)	37.	Bracket, A.A.
3.	Distance-piece, butt handle clip (2)	38.	Pivot
4.	Frame	39.	Leg, A.A., lower
5.	Segment, traversing	<i>Group B</i>	
6.	Stud, joint, rear legs (2)	41.	Nut, screw, clamping, elevating nut
7.	Spring, retainer, A.A. leg (2)	42.	Handle, clamping, traversing slide
8.	Stop, pivot	43.	Cap, nut, elevating
9.	Screw, joint, front leg	44.	Screw, clamping, elevating nut
10.	Spring, joint legs (3)	45.	Collar, screw, elevating
11.	Head, retainer, A.A. legs (2)	46.	Key, sleeve, elevating
12.	Retainer, legs, A.A. (2)	47.	Slide, traversing
13.	Spring, catch, A.A., leg	48.	{ Pin, handle, clamping, elevating sleeve
14.	Nut, bracket, A.A.	49.	{ Pin, handle, clamping, traversing slide
15.	Catch, leg, A.A.	50.	Pin, tumbler
16.	Washer, pivot	51.	Collar, screw, clamping, elevating nut
17.	Nut, stud, rear leg joint (2)	52.	Screw, ring, elevating nut (4)
18.	Pin, split, nut, screw, segment (4)	53.	Screw, plug, elevating sleeve
19.	{ Pin, nut, screw, clamping, front inner leg joint	54.	Screw, clamping, elevating sleeve
20.	{ Pin, nut, screw, front leg joint (2)	55.	Collar, screw, clamping, elevating sleeve
21.	{ Pin, nut, stud, rear leg joint (2)	56.	Pin, collar, screw, clamping, elevating nut
22.	Pin, nut, A.A. bracket	57.	Sleeve, elevating
23.	Screw, clamping, front inner leg	58.	Screw, elevating
24.	Handle, clamping, front and rear legs (3)	59.	Nut, elevating
25.	Spring, catch, front inner leg	60.	Screw, clamping, traversing slide
26.	Leg, front, inner	61.	Nut, screw, clamping, elevating sleeve
27.	Screw, pivot	62.	Handle, clamping, elevating sleeve
28.	Leg, front, outer	63.	Nut, screw, clamping, traversing slide
29.	Screw, traversing segment (4)	64.	Ring, nut, elevating
30.	Leg, rear, L.H.	65.	Tumbler
31.	Screw, stop, traversing slide (2)	66.	Plug, sleeve, elevating
32.	Leg, rear, R.H.		Pin, collar, elevating screw
33.	Leg, A.A. upper		
34.	Catch, leg, inner, front		
35.	Nut, screw, traversing segment (4)		
	Nut, screw, front leg joint		
	Nut, screw, clamping, front inner leg		

# APPENDIX III

## GUN, MACHINE, BREN, 303-IN., MK. I

### ACCESSORIES

List of Parts  
(for identification purposes in conjunction with drawing  
D.D. (E) 1924)

Box, magazines, Bren 303-in M.G., Mk. I	13 Guide, bullet
Box, small parts, M.G., No. 4, Mk. I	14. Button, screw, clamping
Brush, rod, cleaning, cylinder, Bren 303-in M.G., Mk. I	15. Screw, clamping
Can, oil, M.G., Mk. III	16. Arm, clamping
1. Body	17. Stop, charger
2. Cap, screwed	18. Spring, catch, magazine
3. Washer (leather)	Hook, sling, Bren 303-in. M.G., Mk. I
4. Brush, oil (brass stem with bristles)	Magazine, Bren 303-in. M.G., Mk. I
Cleaners, gas regulator, Bren 303-in. M.G., Mk. I	1 Spring, platform
1 Reamer 102-in. diameter	2. Case
2. do. 117-in. "	3. Retainer, bottom plate
3. do. 130-in. "	4 Guide, platform
4. do. 140-in. "	5. Plate, bottom
5. do. 165-in. "	6. Platform
6. Ring (1 1/4-in. dia commercial key ring)	Mop, rod, cleaning, cylinder, Bren 303-in. M.G., Mk. I
Filler, magazine, Bren 303-in. M.G., Mk. I	1. Head
1 Pin, axis, operating lever	2. Stem
2. Screw, bullet guide	3. Plunger
3. { Pin, axis, operating handle	Rod, cleaning, cylinder, Bren 303-in. M.G., Mk. I
{ Pin, register, magazine	Sling, Bren 303-in. M.G., Mk. I
4. Lever, operating (with tip)	Sling, rifle, web
5 Body	Tool, combination, Bren 303-in. M.G., Mk. I
6 Screw, spring, magazine catch	1. Body
7 Pin, axis, magazine catch	2 Screwdriver, forked, large
8 Pin, axis, clamping arm	3. Screwdriver, large
9. Handle, operating	4 Hammer
10. Catch, magazine	5. Pin, screwdrivers
11. Pin, split, magazine catch pin	6. Screwdriver, forked, small
{ Pin, split, pin, axis, clamping arm	7. Screwdriver, small
12. { Pin, split, pin, operating lever	Wallet, Bren 303-in. M.G., Mk. I

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(371) Wt. 19458-8940 3,500. 8/38 W. C. & S., Ltd. Gp. 394.

SCALE 1/2 FULL SIZE.

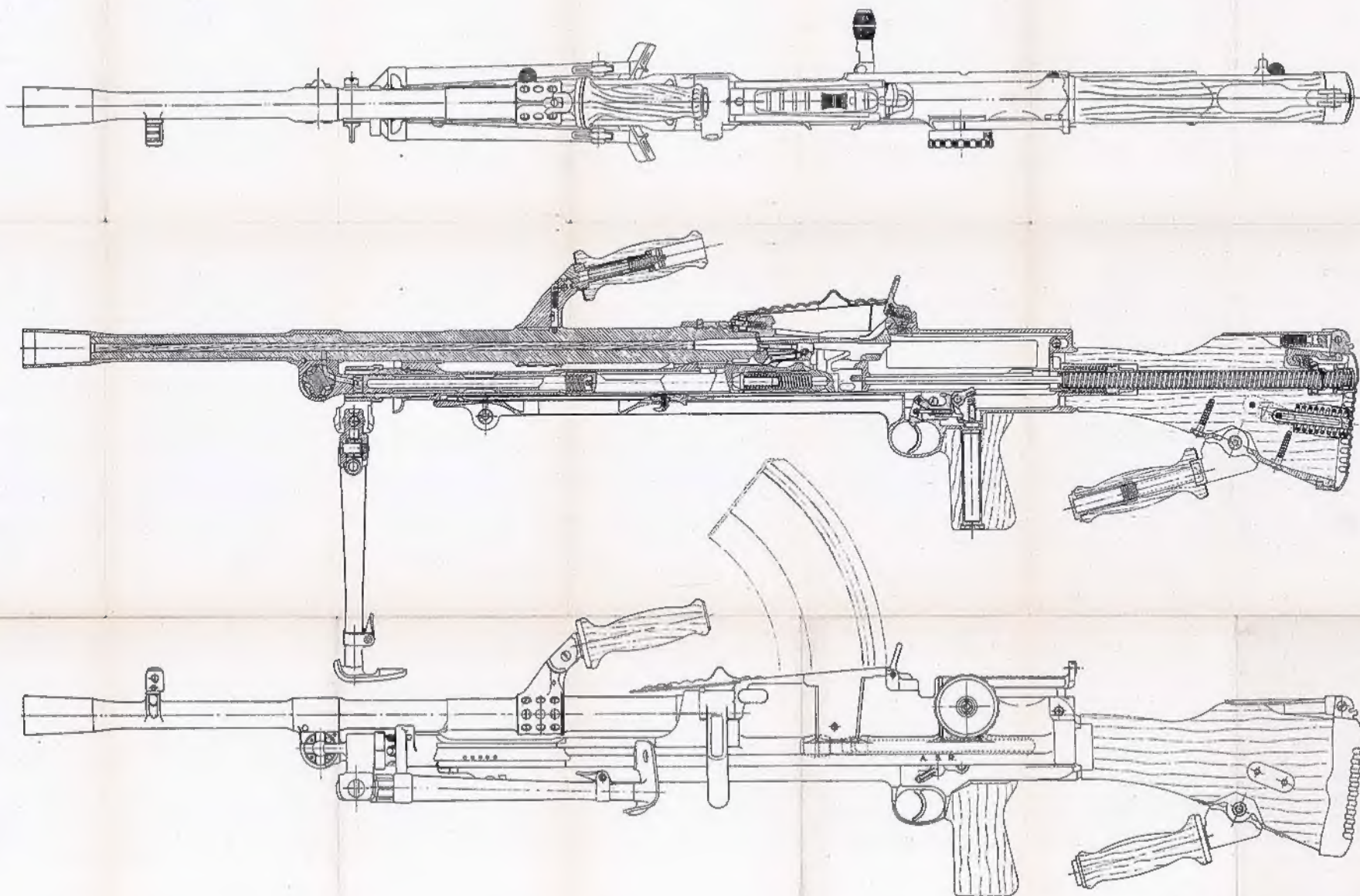
GUN, MACHINE, BREN, .303 IN., Mk.I

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2 SHEETS SHEET 1

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*W. J. P. 1923*









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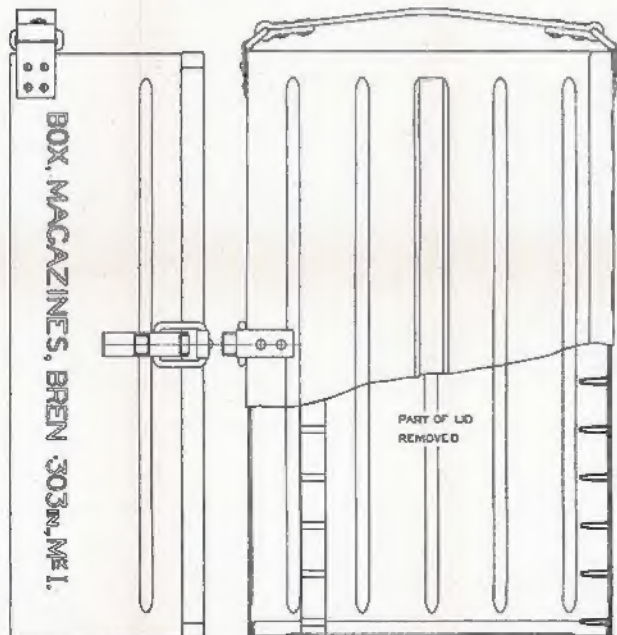
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## ACCESSORIES.

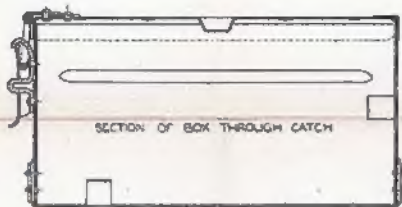
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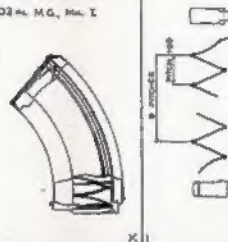
BOX, MAGAZINES, BREN 303 IN. M.G. Mk. I



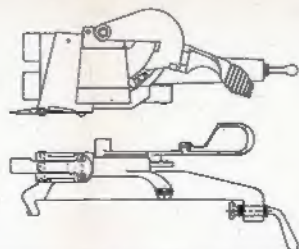
SECTION OF BOX THROUGH CATCH



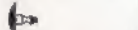
MAGAZINE, BREN 303 IN. M.G. Mk. I



FILLER, MAGAZINE, BREN 303 IN. M.G. Mk. I



BRUSH, ROD, CLEANING, CYLINDER, BREN 303 IN. M.G. Mk. I



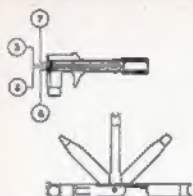
MOP, ROD, CLEANING, CYLINDER, BREN 303 IN. M.G. Mk. I



ROD, CLEANING, CYLINDER, BREN 303 IN. M.G. Mk. I



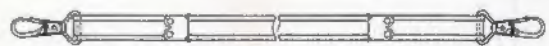
TOOL, COMBINATION, BREN 303 IN. M.G. Mk. I



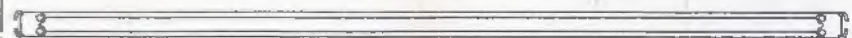
HOOK, SLING, BREN 303 IN. M.G. Mk. I



SLING, BREN 303 IN. M.G. Mk. I (CONSISTING OF 2 HOOKS AND 1 SLING)



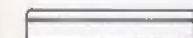
SLING, RIFLE, WEB.



CAN, OIL, M.G. Mk. III



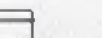
BOX, SMALL PARTS, M.G. Mk. I



BOX, SMALL PARTS, M.G. Mk. I



BOX, SMALL PARTS, M.G. Mk. I



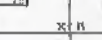
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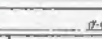
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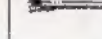
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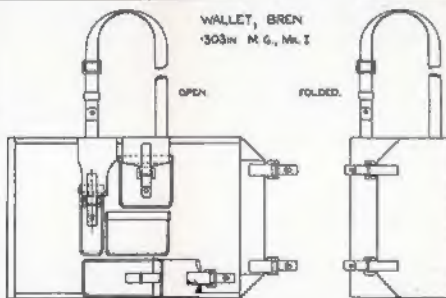
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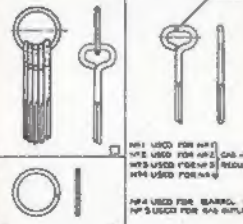
BOX, SMALL PARTS, M.G. Mk. I



WALLET, BREN 303 IN. M.G. Mk. I



CLEANERS, GAS REGULATOR, BREN 303 IN. M.G. Mk. I



N1 USED FOR N1 (1)  
 N2 USED FOR N2 (2) GAS HOLE IN  
 N3 USED FOR N3 (3) REGULATOR  
 N4 USED FOR N4 (4)  
 N5 USED FOR N5 (5)  
 N6 USED FOR N6 (6)  
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SCALES.  
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 □ DENOTES SCALE 1/2.  
 ◇ DENOTES SCALE 3/4.

# MOUNTING, TRIPOD. BREN .303N MG. M&I

DD(E) 1925.

30-7-37

